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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/774,232

02/06/2004

Wu Qing

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EXAMINER

SHAW, PELING ANDY

ART UNIT

PAPER NUMBER

2144

MAIL DATE

DELIVERY MODE

05/01/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/774,232	Applicant(s) QING ET AL.	
	Examiner PELING A. SHAW	Art Unit 2144	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/29/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Amendment received on 01/30/2008 has been entered into records. Applicant's amendment to the specification is reviewed and accepted. Claims 1-2, 4-6 and 8-12 are amended. Claim 13 is new. Claims 1-13 are currently pending.

Priority

2. This application has claimed a priority # CHINA 03106929.0 on 02/26/2003. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file. The filing date is 02/06/2004.

Claim Rejections - 35 USC § 112, second paragraph

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph as following:

- a. Claim 1 recites the limitation of "the addresses of calling subscriber and called subscriber and QoS requirement for a service through analyzing a service request" in lines 3-5. There is insufficient antecedent basis for this limitation in the claim. Claim 1 and its dependent claims 2-13 are thus rejected. For the purpose of applying art, this limitation is read as "calling subscriber address, called subscriber address and QoS requirement for a service through analyzing a service request" in consistent with paragraphs 29-30 of applicant's specification.
- b. Claim 1 recites the limitations of "an IP access network" in line 2", "access network corresponding to the call subscriber and the called subscriber, respectively" in lines 6-7, "after receiving requests, edge routers of the access network corresponding to the

call subscriber and the called subscriber” in lines 8-9, “if there are upward traffic streams of the access network in this service, the edge router informing an access network end device of the QoS requirement for the service, the access network end device processing said traffic streams according to the QoS requirement” in lines 13-16 and “If there are downward traffic streams of the access network in this service, said the edge router setting priority in the access network for this service and forwarding said traffic streams”. There are insufficient antecedent basis for these limitations in the claim. Claim 1 and its dependent claims 2-13 are thus rejected. For the purpose of applying art, the limitations are read instead of as “IP access network” in line 2”, “access networks corresponding to the call subscriber and the called subscriber, respectively” in lines 6-7, “after receiving requests, edge routers of the access networks corresponding to the call subscriber and the called subscriber” in lines 8-9, “if there is an upward traffic stream of the access networks in this service, the corresponding edge router informing an access network end device of the QoS requirement for the service and the access network end device processing said traffic stream according to the QoS requirement” in lines 13-16 and “if there is a downward traffic stream of the access networks in this service and the corresponding edge router setting a priority in the corresponding access network for this service and forwarding said traffic stream”.

- c. Claim 2 recites the limitation of “the edge router can transform service levels into priorities in the access network for the received service traffic streams and forward said traffic streams”. There is insufficient antecedent basis for this limitation in the

- claim. Claim 2 is rejected. For the purpose of applying art, the limitation is read as “the edge router can transform service levels into priorities in the corresponding access network for received service traffic streams and forward said traffic streams”.
- d. Claim 9 recites the limitation of “wherein the network devices between said access network end devices and said edge router of the access network forward the traffic streams according to the priorities of the traffic streams”. There is insufficient antecedent basis for this limitation in the claim. Claim 9 is rejected. For the purpose of applying art, the limitations are read as “wherein network devices between said access network end device and said edge router of the corresponding access network forward the traffic streams according to the priorities of the traffic streams” in consistent with claim 1 language.
- e. Claim 10 recites the limitation of “the access network end devices” in lines 3-4. There is insufficient antecedent basis for this limitation in the claim. Claim 10 is rejected. For the purpose of applying art, the limitation is read as “the access network end device”.

Applicant is required to further modify these limitations to clarify intended claim limitations.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 20040165592 A1), hereinafter referred as Chen in view of Silverman (US 6731649 B1), hereinafter referred as Silverman.

- a. Regarding claim 1, Chen shows (claim 1) a method for providing services with guaranteed Quality of Service (QoS) in an IP access network (paragraph 3: guarantee application specific IP QoS via the combination of ATM switched virtual connections (SVCs) and permanent virtual connection (PVCs)), comprising: a. a service entity (paragraph 31: connection server 25) at network service control layer obtaining the addresses of calling subscriber and called subscriber (paragraphs 40-41 and 43: routing packet, policy routing instruction includes source IP network address and destination IP network address) and QoS requirement for a service through analyzing a service request of the calling subscriber (paragraph 31: a subscriber transmits a connection setup request to the connection server; paragraph 32: calculate available bandwidth and perform CAC for ATU-R and DSLAM; paragraphs 35-35: CAC to determine if sufficient available bandwidth exists in ATU-Rs and DSLAMs and connection server sends SVC requests through a proxy signaling agent to edgeent

switch of ATM network; paragraph 45: connection server establish two connection segments, one originating at each subscriber, to a common network to network interface meeting point; paragraph 56: connections server ensures that enough bandwidth exists for a connection request for DSLAM; paragraph 58: request for connection to its respective network service agent; paragraph 94: setup message carries QoS parameter, signaling message includes QoS requirement), then requesting network resources to access network corresponding to the calling subscriber and the called subscriber, respectively (paragraph 35: connection server 25 determines bandwidth available; paragraph 56: connection server 25 ensures and grants bandwidth); b. after receiving requests, edge routers (paragraph 97: ATM switch) of the access network corresponding to the calling subscriber and the called subscriber judging whether enough resources can be provided for this service according to current resource condition, if so, executing step c, otherwise rejecting the service request of the calling subscriber (paragraph 97: ATM switch determine if can satisfy the requirement of connection based on traffic descriptor; paragraph 106: policy imposed on each connection based on the traffic descriptor; paragraph 35: connection server 25 determines bandwidth available; paragraph 56: connection server 25 ensures and grants bandwidth; paragraph 100: check whether there are enough network resources to accommodate this connection; checks fail, a standard release message is returned); and c. if there are upward traffic streams of the access network in this service, the edge router informing an access network end device of the QoS requirement for the service (paragraphs 94-95: signaling includes QoS

requirement, SETUP message to ATM switch and the QoS application sends a QoS connection setup message through the API to the ATU-R; paragraph 97: ATM switch determine if can satisfy the requirement of connection based on traffic descriptor), the access network end device processing said traffic streams according to the QoS requirement (paragraph 39: traffic packets are transmitted from the source subscriber 10 over QoS connection; paragraph 106: policy imposed on each connection based on the traffic descriptor). Chen does not explicitly show (paragraph 43) if there are downward traffic streams of the access network in this service, the edge router setting priority in the access network for this service and forwarding said traffic streams.

However Chen does show (paragraph 43) traffic packet priority information carried in IP header; (paragraph 5) a DSL subscriber connected to ATM through point-to-point protocol over Ethernet (PPPoE); and (paragraph 47) ATU-R 12 may functions like an Ethernet bridge with additional packet mapping capabilities and the switching is based on MAC addresses and mapping rules for outgoing PVC with QoS.

- b. Silverman shows (column 7, lines 11-14) tagging ToS with high priority when going through IP network; and (column 10, line 65-column 11, line 4) Gigabit Ethernet switches and Terabit routes use 802.1p&q, ToS and UDP port number to mark and identify packet priority in an analogous art of ATM edge node switching equipment utilized IP-VPN function.
- c. It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify Chen's functions of interfacing ATM switch with source subscriber through an ATU-R in bridge mode, i.e. Ethernet connection, and

- DSLAM as per Figure 1 of Chen with Silverman's functions of tagging packet priority on a Gigabit Ethernet switch or Terabit route.
- d. The modification would have been obvious because one of ordinary skill in the art would have been motivated to explicitly use the packet priority tagging capability as per 802.1p&q shown by Silverman in the IP QoS connection over ATM connection as per Chen (Fig. 1) and Silverman (column 1, lines 39-51)'s teaching.
- e. Regarding claim 2, Chen shows wherein in step c, the edge router can transform service levels into priorities in the access network for the received traffic streams and forward said traffic streams (paragraphs 90 and 97: levels of CAC based on service category, e.g. CBR, VBR-rt, VBR-nrt, UBR, select lowest service category and lowest bandwidth). Silverman shows wherein in step c, the edge router can classify streams first, after identifying the traffic streams, transform the identified traffic streams into priorities in the access network and forward the traffic streams (column 7, lines 11-14: tagging ToS with high priority when going through IP network; column 10, line 65-column 11, line 4: Gigabit Ethernet switches and Terabit routes using 802.1p&q, ToS and UDP port number to mark and identify packet priority).
- f. Regarding claim 3, Chen shows wherein step c is executed after said edge router has informed the service entity at network service control layer that the access network can provide enough resources for the service and has received confirmation from the service entity (paragraph 97: ATM switch determine if can satisfy the requirement of connection based on traffic descriptor; paragraph 106: policy imposed on each connection based on the traffic descriptor; paragraph 35: connection server 25

- determines bandwidth available; paragraph 56: connection server 25 ensures and grants bandwidth; paragraph 100: check whether there are enough network resources to accommodate this connection; checks fail, a standard release message is returned).
- g. Regarding claim 4, Chen ~~shows~~ further comprising a step of said edge router obtaining at least topology structure of the access network and bandwidth resources of each interface through static configuration or dynamic management protocol (Figure 1: connection server 25 sits on the edge of Internet 20; paragraphs 54 and 56: connection server manages the complex topology of any DSLAM, e.g. the total bandwidth available on a DSLAM trunk port (interface), pre-provisioned PVCs; paragraphs 40 and 43: routing packets, policy routing instruction includes protocol ID; paragraph 90: ATM switch 15 stores the following information in relation to each Extended Virtual UNI: a service-active identifier, which is set upon subscription to the service; a VPI/VCI range, identifying the VP and the range of contiguous VCs within the VP; a maximum equivalent bandwidth and an available bandwidth; and information regarding the PVCs pre-configured in the DSLAM 14; see also paragraph 33 of applicant's specification).
- h. Regarding claim 5, Chen ~~shows~~ after the access network end device receives QoS requirement of the service in step c, the method further comprising: setting items of a stream classification table according to parameters for identifying traffic streams in the QoS requirement (paragraph 37: routing tables, routing entries; paragraph 43: type of service; paragraph 90: PVC information include QoS parameters); classifying the received upward traffic streams of the calling subscriber (paragraphs 94-95: signaling

- includes QoS requirement, SETUP message to ATM switch); and managing bandwidth according to bandwidth parameters for the traffic streams matched with the items of the stream classification table, and processing other traffic streams as traffic streams without guaranteed QoS (paragraph 39: traffic packets are transmitted from the source subscriber 10 over QoS connection; paragraph 97: ATM switch determine if can satisfy the requirement of connection based on traffic descriptor; paragraph 106: policy imposed on each connection based on the traffic descriptor).
- i. Regarding claim 6, Chen shows after wherein the step c comprises: setting the traffic streams with high priorities and then forwarding the traffic streams for Ethernet access (paragraph 43: traffic packet priority in IP header; paragraph 47: Ethernet bridge with packet mapping capabilities) or IP Digital Subscriber Line Access Multiplexer (DSLAM) access (paragraph 54: priority bandwidth on the DSLAM up-link ports); and sending the traffic streams to Permanent Virtual Circuit (PVC) with guaranteed QoS for further forwarding for ATM DSLAM access (paragraph 3: guarantee application specific IP QoS via the combination of ATM switched virtual connections (SVCs) and permanent virtual connection (PVCs)).
- j. Regarding claim 7, Chen shows wherein the parameters for identifying traffic streams can be a four-element group, a five-element group or a seven-element group (paragraph 43: policy routing instruction syntax includes source IP network address, source network mask, destination IP network address, destination network mask, IP protocol ID, type of service (TOS), source port number, destination port number,

- gateway IP address, interface IP address, metric; see also paragraph 37 of applicant's specification).
- k. Regarding claim 8, Chen shows further comprising: before receiving QoS parameters from the edge router of the access network for upward traffic streams, the end devices processing the received traffic streams from the calling subscriber as traffic streams without guaranteed QoS (paragraph 39: traffic packets are transmitted from the source subscriber 10 over either the new QoS connection or the default route to the ISP, based upon whether or not the packet originates from an application associated with the new QoS connection).
- l. Regarding claim 9, Chen shows wherein the network devices between said access network end device and said edge router of the access network forward the traffic streams according to the priorities of the traffic streams (paragraph 88: ATU-R requires policy-based routing, enabling packets to be forwarded on different VCs to conform to the SVC parameters).
- m. Regarding claim 10 dependent on claim 5, Chen shows further comprising: after the calling subscriber terminates the service, if there are upward traffic streams, said edge router sending a QoS release command (paragraph 104: sends a standard release message to the ATM switch 15, the ATM switch 15 performs standard SVC release actions and adds bandwidth back to the available bandwidth), the access network end devices deleting corresponding items of the stream classification table according to parameters of said command (paragraph 104: deletes the corresponding policy routing entry in the routing table).

- n. Regarding claim 11 dependent on claim 6, Chen shows further comprising: after the calling subscriber terminates the service, if there are upward traffic streams, said edge router sending a QoS release command (paragraph 104: sends a standard release message to the ATM switch 15, the ATM switch 15 performs standard SVC release actions and adds bandwidth back to the available bandwidth), the access network end devices deleting corresponding items of the stream classification table according to parameters of said command (paragraph 104: deletes the corresponding policy routing entry in the routing table).
- o. Regarding claim 12 dependent on claim 7, Chen shows further comprising: after the calling subscriber terminates the service, if there are upward traffic streams, said edge router sending a QoS release command (paragraph 104: sends a standard release message to the ATM switch 15, the ATM switch 15 performs standard SVC release actions and adds bandwidth back to the available bandwidth), the access network end devices deleting corresponding items of the stream classification table according to parameters of said command (paragraph 104: deletes the corresponding policy routing entry in the routing table).
- p. Regarding claim 13 dependent on claim 5, Chen shows further wherein managing bandwidth according to bandwidth parameters comprises: performing bandwidth limitation, by the access network end device, according to bandwidth parameters (paragraph 35: the connection server performs a call admission control step to determine if sufficient available bandwidth exists in the ATU-Rs and DSLAM to accommodate the connection request).

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Together Chen and Silverman disclosed all limitations of claims 1-13. Claims 1-13 are rejected under 35 U.S.C. 103(a).

Response to Arguments

5. Applicant's arguments filed on 01/30/2008 have been fully considered, but they are not persuasive.
- a. Applicant has amended the claim language to address the claim rejection under 35 U.S.C. 112, second paragraph. Examiner has reviewed the changes and updated the claim rejection under 35 U.S.C. 112, second paragraph as above.
 - b. Applicant has argued that Chen's connection server does not request the ATM switch to check the availability of the bandwidth and the service entity per claim 1 does not correspond to the connection server in Chen (see 2nd paragraph on page 9 of current amendment). Examiner has reviewed applicant's original specification and claim language and found the term of service entity is used in the original claim language, the Summary of Invention, Fig. 4 (processing flow), paragraphs 28-32 and paragraph 44 of applicant's specification. In paragraph 44, the service entity seems to refer to the Service servers in Fig. 5. Service server is exempted as a softswitch in Fig. 1. Examiner has referred the connection server as per Fig. 1 and paragraph 31 of Chen as the service entity as per applicant's specification as above, i.e. the connection server per Fig. 1 of Chen reads upon the Service server (such as softswitch) of Fig. 1 or Service servers of Fig. 5 of applicant's specification. Further search and examination has identified various additional paragraphs from Chen on how connection server works with DSLAM, ATU-R and edge switches of ATM network in CAC and SVC including bandwidth checking. Claim 1 rejection is updated with these references identified from Chen.

- c. Applicant has argued that Chen fails to teach or suggest (as per step c of claim 1) the edge router informs the end device of the QoS requirement (see paragraphs 1-2 on page 10 of applicant's current amendment). Examiner has reviewed the claim 1, rejection and found that the recited reference as quoted by applicant in paragraph 2 on page 10 of applicant's current amendment does refers to sending a QoS connection setup message. As per applicant's claim 1 language and paragraph 37 of specification, the upward traffic seems to refer to a direction from an edge router to an access end device and Chen's sending QoS setup message is from an edge switch to a ATU-R, i.e. an access network end device. For downward traffic as per applicant's specification and claim language, Chen has shown (paragraph 43) traffic packet priority information carried in IP header; (paragraph 5) a DSL subscriber connected to ATM through point-to-point protocol over Ethernet (PPPoE); and (paragraph 47) ATU-R 12 may functions like an Ethernet bridge with additional packet mapping capabilities and the switching is based on MAC addresses and mapping rules for outgoing PVC with QoS. Silverman is used further to show (column 7, lines 11-14) tagging ToS with high priority when going through IP network; and (column 10, line 65-column 11, line 4) Gigabit Ethernet switches and Terabit routes use 802.1p&q, ToS and UDP port number to mark and identify packet priority. Together, Chen and Silverman seem to have the limitation.

Conclusion

6. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Refer to the enclosed PTO-892 for details.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peling A. Shaw whose telephone number is (571) 272-7968. The examiner can normally be reached on M-F 8:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William C. Vaughn can be reached on (571) 272-3922. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/P. A. S./

Examiner, Art Unit 2144

/William C. Vaughn, Jr./

Supervisory Patent Examiner, Art Unit 2144